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EDITORIAL NOTES.

The Royal Commissioners who are entrusted with the regulations of the premiums given for thoroughbred stallions have drawn up a list of the diseases which shall be considered hereditary unsoundness, and which shall disqualify a horse for a premium. The list omits one or two of the diseases that were decided upon by the Royal College of Veterinary Surgeons as transmissible, but it marks an advance in the right direction, and can do nothing but good. The *North British Agriculturist* points out that "the crucial point where the disagreement comes in is to decide whether a horse be or be not affected with any of the subtler forms of any of the diseases." This is just the point too where the veterinarian comes in, and where we are certain at times to fail in giving satisfaction to the owners of rejected horses. The task of veterinary referee has always been an invidious one, and will continue to be one of difficulty. It will in future be easier in so far as having a definite list of diseases, the existence of which *must* disqualify. It was much more difficult when each individual had to estimate the value of the disease he detected, and there was a great likelihood that men might, at separate competitions, put a different value on the defects they found. Now we have simply to decide whether certain defects exist, and in few cases will a horse be rejected at one show and passed at another. Absolute unanimity of opinion we need not expect. Every now and then a horse will be met with whose feet, or legs, or wind, will be condemned by some and passed by others. There is no well-defined margin between health and disease; the two states are not diametrical opposites where distinct recognition is simply dependent on careful observation. On the contrary they are often separated merely by the finest shade of difference, and in some cases there is plenty of scope for honest but adverse opinions after the most careful examination by men of undoubted skill and the widest experience. That "a host of veterinary authorities may be at sixes and sevens in deciding whether a horse be or be not affected with some particular disease" is no discredit to the profession; it is simply proof of the extremely indistinct form assumed by some variations from health, or it may be of the great similarity assumed by some healthy structures with those denoting disease. Some horses hocks, for instance, show extraordinary development of the cuneiform ridges, and thus whilst absolutely sound approach so closely to the form of spavin that a difference of opinion between veterinarians is certain to arise. Again, in roaring there are cases in which the sounds of respiration are such that any number of experts might be divided in opinion. We cannot avail ourselves of scientific instruments, our senses are our only guides. Nature has not formed animals in moulds; every line of every animal varies to some extent, and disease is only an alteration from health which progresses as slowly as natural growth.

As the twig is bent so the tree will grow, and as the student is formed so will the profession be shaped. It is, then, a matter of the deepest interest to us all how the schools provide for the mental and social training of their pupils. Habits formed at College become more or less permanent, and the mark of early training is never obliterated. At whatever school we find a teacher more than usually earnest and skilful in his special subject we shall find students pre-eminent in that subject, whether it be Anatomy, or Physiology, or the practice of either Medicine, or Surgery. So also will the marks of dogmatism or doubtfulness be impressed by the teacher possessing them; even the general tone of the institution is contagious, and we can all of us point to men whose tastes and manners reflect their early College training.

Now many little things go to make up the sum of impressions effected. A well-fitted dissecting-room, properly conducted must conduce to turning out good anatomists. A first-class museum goes a long way to impress a taste for pathological study, and a comfortable reading-room must give an impetus to the taste for reading, which is certainly not a strong point in our members.

Holding as we do that no member of a scientific profession can do justice either to his clients or himself who does not read, we welcome any change at the schools which is likely to encourage a taste for reading. At Camden Town there has long been a reading room and library, but from various causes the students have made little use of it. All this we hear is to be altered, the room is to be enlarged, the books are to be increased in number and their circulation facilitated, whilst the reading table is to be supplied with a wider selection of literature. This is welcome news. Next to foreign travel, we should say an extensive acquaintance with books was most likely to widen a man's mind. The veterinary student should be encouraged to keep abreast of the times, and on a level with his future clients by a wider acquaintance with books and papers than is afforded by purely veterinary literature. Agriculture, natural history, sport and science are not subjects we would force upon him but they are represented by organs in the press which might well be brought under his weekly or monthly notice.

ARTICLES AND CASES.

KERATOMA,
A HORN TUMOUR OF THE FOOT OF HORSE

By Alfred C. Wild, M.R.C.V.S.
Demonstrator R.V.S.

The presence of abnormal growths of horn in the foot of the horse, giving rise to severe lameness, has for some time past engaged my attention, and I am now, through the kindness of Mr. Hicks, V.S., Bermondsey, enabled to record six cases, two of which have received my personal attention. I here give a brief history of the cases.

Case I. Brown mare cob, aged; fore foot lameness. On searching foot a hard growth was found on the solar surface of toe, around it suppuration had commenced. Treatment: horn of sole pared down around the growth, when it was found to pass in an upward direction, rising up between the wall and the laminæ. A part of the wall was then removed, over the growth, which was found to be embedded in the sensitive laminæ. Poultices were applied, and in a few days the horny growth was removed in pieces. The growth was said to be about the size of a birch twig, thick at its base (which was the part first seen on the sole), and gradually tapering off as it passed up the foot to terminate at the coronet. The animal made a perfect recovery, and was at work in twelve weeks.

Case II. Chestnut cart mare, aged; fore foot lameness. Foot searched and a similar growth so far as concerns position as in case I. Treatment the same, but in taking away the growth with the pincers it was unfortunately broken in several pieces. The horny growth was smaller and thinner than the last. The case made a rapid recovery.

Case III. Chestnut mare cob, aged; fore foot lameness. Treatment same as other cases. Growth removed was about ⅜ in thickness at base and tapering at apex. Animal sound and at work in two months.

Case IV. Cart mare, aged; fore foot lameness. Treated as before: growth removed. Animal recovered. Further details lost.

Case V. (Under own observation). Brown cab mare, aged. The mare when I first saw her, had been very lame for about a week, and when brought to the farrier's could hardly put her near hind foot to the ground. On removing the shoe, on the solar surface of the toe was noticed a hard piece of horn, darker in colour than the sole, and slightly moveable—a little pus came away when searching. We recognised the growth to be a keratoma, and our previous experience led us to know what was best to be done, accordingly a part of the wall of the foot in a line with the growth was removed, when we easily made out that the growth extended to the coronet, in the usual manner, viz: between the horny wall and the sensitive laminæ. After poulticing for a day or two we were enabled to pull the growth away, and there then could be distinctly seen a depression in the laminæ due to their partial absorption by pressure. The animal soon recovered and has worked sound ever since.

I made a section for the microscope to demonstrate that it was a keratogenous, a true horn tumour.

Case VI. (Under own observation). Van horse, aged; very lame in near fore foot. Foot searched, horn tumour found: treatment the same. Growth nearly 1 inch in circumference at base gradually thinning out as it approached the coronet. In shape this somewhat resembled a horse's incisor tooth. Recovery was prolonged owing to the very profuse granulations which followed removal, and in future cases I shall run a wood plug up the groove made in the wall, as recommended by South in the treatment of sandcrack, and I think that we shall be able to send the animal to work at a much earlier date.

The conclusions I draw from these cases are:—

1st. That horn tumour of the foot is not altogether such an uncommon cause of lameness as is thought.

2nd. That when recognised they must be treated by removal, when recovery from lameness will be rapid.

Pathology.—By careful examination I believe that these growths commence in some hypertrophied papillæ situated at the solar surface of toe, at that part which is sometimes known as the toe stay. In all six cases the growth took the same direction, and being gradual in growth, they did not cause lameness, the soft parts of the foot accommodating themselves to the new growth; they caused lameness only when for some reason or other they acted as foreign bodies and set up suppuration.

I would next call attention to the fact that in these recorded cases the growths were always at the same seat, so that we might consider whether or not irritation due to the pressure of the clip of the shoe might not be an exciting cause. I understand that similar growths are seen in cart horses working at the docks and wearing shoes with heavy toe pieces. I however cannot find any literature on the subject and should be pleased to hear further on this point. The fore feet seem to be usually the seat of the growth.

I think one might readily come to the conclusion that these horn tumours do not always give rise to lameness, and I am now on the look out for them in every dead foot I come across.

INJURIES TO THE FOOT.*

By A. Rogerson, M.R.C.V.S.

Mr. President anh Gentlemen,

To every Veterinary Surgeon the injuries and diseases occurring to the foot of the horse are important and interesting; but to those who combine a forge with their practice, they possess more than a scientific importance, a forge being undoubtedly a great source of worry and anxiety to the practitioner, and at times attended with troubles and litigation.

* Read before the meeting of the Central V. M. S., Dec. 5th, 1889.

It must be acknowledged that most of the injuries to the foot are attributable either directly or indirectly to the forge, and therefore *may* be due to negligence.

It should be our endeavour to avoid these cases, and a correct understanding of their origin and cause is a long step on the way to their prevention.

I propose then, first to consider those injuries occuring in the forge, and to begin with, what is commonly termed

Burnt Sole.

This condition is brought about by applying the shoe too hot whilst fitting it to the foot, and the part of the foot most liable to this particular kind of injury I have found to be around the sole at the toe. This may no doubt be attributed to the extra amount of pressure brought to bear on the shoe at the time of fitting, and to the greater amount of susceptibility—this part of the foot being usually thinner than any of the rest, and when this condition is noticeable, it is a good plan to apply a little stopping over the thin place before fitting.

Another cause which I think worthy of mention in passing, is that it is by no means uncommon for the smith, whilst in the act of fitting, to rest the toe of the shoe on the end of the rasp, thus causing an additional amount of pressure at this part of the foot.

The lameness resulting from this kind of injury quickly follows, and it is not unfrequently of a very acute kind, the next morning probably the horse will scarcely be able to bear his foot in contact with the ground.

On removal of the shoe, and with a little careful manipulation, the seat of the injury will soon be detected. On cutting away the superficial layers of the sole the appearance presented is of an unmistakable and pronounced character; the burnt horn fibres are usually accompanied with an exudation of a sero-sanguineous nature, and most acute pain is evinced on the slightest pressure to the part.

If the injury is not of so serious an extent as to involve the more deep seated structures of the foot, the case will, as a rule, be quickly amenable to the ordinary treatment, and with a few days rest and the application of a leather sole and a side-clipped shoe, the horse will generally be sound and fit for work again.

I have a distinct recollection of one fatal case accruing from a burnt sole.

The next, and I think it may be said the most frequent kind of injury which we have to encounter is that ordinarily denominated

Pricking.

Pricks or punctures to the horse's foot during the time of his being shod are the results of nails being driven, either carelessly or otherwise, so far as to damage the sensitive structures within the horny appendage.

Pricking may be classified into two kinds. *Firstly*, where the nail is actually driven so far as not only to penetrate the sensitive soft structures, but even in occasional instances the bone itself. When the latter is the case, I have no hesitation in saying that it is entirely due to gross ignorance or want of skill on the part of the shoeing-smith; and the result is a mutilation which is in nine cases out of ten attended with fatal consequences. *Secondly*, that which may or may not be ascribed to any fault of the smith; for instance, where the nail is driven so close as to cause bulging of the inner layer of the horn, (frequently the result of what is termed "Buckling of the nail") and consequently pressure is brought to bear upon the sensitive interior, leading on to inflammation with or without suppuration and lameness. To this description, according to the farriers' phraseology, the term "nail bound" is generally applied.

The various causes which may enhance the possibility of pricking, are badly-fitted shoes, coarseness of the nail-holes in the shoe—causing the nail to pitch and take too deep a hold of the foot, badly pointed nails—as a result we may get splitting of the point and consequent mis-direction of the nail in its course. Another and by no means infrequent cause is in not removing the old "stubbs" from the foot, previous to driving the nails.

Whilst on the subject of "Nails,"—since the machine-made and ready-pointed nail has been so largely substituted for the old-fashioned hand-made one—I think it a question worthy of our consideration, which of the many kinds of machine manufacture is the best to use? So far as my experience goes I give preference to the "Star Nail," not only as regards its make and shape, but also its practical utility.

Injuries of this nature may arise also from a deficiency of horn in any part of the foot, either traumatic or natural. When this is the case it is better for the smith not to attempt the insertion of a nail rather than run the risk of laming the horse. As to natural conformation, I have found that those generally termed "mule footed" are more susceptible to this kind of injury than any other.

It is not necessarily the case that when the seat of the injury is determined upon, the damage done is to be attributed to the nail in the immediate vicinity. This point must be decided upon at the time of examination, which I, need hardly remind you should be done carefully and with some amount of skill. In my opinion, where practicable, the presence of the veterinary surgeon should always be enforced, or he may frequently be misguided and almost perplexed in arriving at a correct decision, by the smith, in order to screen himself, wilfully mutilating the foot in such a way as to render it a matter of impossibility for either the veterinary surgeon or any one else to arrive at any definite opinion as to the actual cause of lameness. The lameness arising from a prick in shoeing generally manifests itself shortly after the horse has been shod, say from two to four days, but it is by no means uncommon for the horse not to drop lame for even two or three weeks afterwards. In the latter case, I may say that during my experience it is, as a rule, not due to the nail in the foot at the time, but to what is usually termed a "drawn nail," and the period that has elapsed between the time of shoeing and the manifestation of the lameness may be ex-

plained by the inflammatory action resulting in consequence of the damage done being more tardy in its progress than if it were subject to the continued irritation of a nail left in the foot. I have not found it to be the case as described by some veterinarians, that when the puncture or prick is at the toe of the foot the suppurative action is much quicker, and makes its way to the coronet more readily than when any other part of the foot is affected. We have nothing to guide us in saying that there is any dissimilarity in the texture of the horn in any particular part, therefore I fail to comprehend upon what ground this theory can be based, Bearing in mind the internal relations of the foot, and the intimate connection subsisting between the sensitive and non-sensitive structures, it may be a matter for surprise and even congratulation that injuries of this nature are not of more frequent occurrence. As pricks in shoeing do and will at times happen to the most expert hands, we ought not to attribute every case to ignorance or blundering. The success to be achieved in the treatment of these cases depends entirely upon the timely relief of the encased matter, and when this is given promptly and skilfully, I may say that generally speaking no other kind of foot injury is more easily dealt with, but on reversion of this order I think I am equally right in saying that no other kind of injury to the foot is attended with more disastrous results, hence the unquestionable advisability of the presence of the Vet., whose decision of the case should always be final, impartial, and unprejudiced.

Having completed a summary of the injuries which are directly connected with the forge, we now pass on to those which owe their origin to other sources, coupled of course with the mode of shoeing to a greater or less degree, and the first I will mention is :

Corns.

The name of corn is unquestionably a term borrowed from human surgery, probably because like corns affecting the foot of the superior animal, they are found to originate from a bruise or from continued pressure; but if the comparison be carried further than this, misconception will undoubtedly result, for corns affecting the foot of the horse *must* pathologically be regarded as quite a different disease to that appertaining to the foot of man. The structures involved in the two morbid processes are not of course histologically to be compared.

Corns affecting the animal with which we have to deal, are undoubtedly a *great cause* of lameness, particularly amongst the heavier class of horses which are submitted to the constant jar of our London stones. To describe the cause of this malady it would in a great measure be correct to attribute it to faulty shoeing, for as I am not aware of any horse ever being the subject of this affection, previous to his being submitted to the hands of the shoeing smith, and as lameness does not follow for several days after being shod, I think it is feasible to assert the primary offending cause to be the shoe.

The seat of corn is well-known to all of you. I should describe it as being situated in the triangular space between the bars and quarters at the heel of the foot. A corn may consist only of a mere contusion, or bruise to the villous tissue of the sensitive sole, producing blood extravasation, which permeates the pores of the horn and causes the discoloration so noticeable on removing the superficial layers of the sole. This condition only constitutes the *primary* stage of the foot disease, and if this is accompanied with lameness, and immediate attention is called, the treatment usually adopted is simple and in a general way very effective. But when this is neglected and the primary stage prolonged by allowing the offending cause to remain, the inflammatory action goes on, and the pathological changes that take place result in a collection of *purulent* matter in the part, in which case it is denominated a *suppurating or festered corn.*

This condition is generally accompanied by most acute lameness, and the treatment necessary is usually of a more difficult character, and perhaps I shall find from more experienced members present, that it affords room for a divergence of practice. Cases have come under my observation in which when the corn *has* been in the suppurative stage, the lameness manifested has only been slight, and these are the kind of cases which not unfrequently prove so troublesome to the Veterinarian, as the pus not being allowed to escape below, works its way for an outlet at the coronet, and then we have to encounter one of the most refractory of all foot diseases viz., a Sinuous Abscess or Quittor.

According to the teachings of "Gamgee" and others, corns were described as "horny tumours." This description would not coincide with our teaching at the present day, for during the period that I have been connected with a large stud of horses—and I might say that I rarely fail to make an examination of each case of lameness that happens—I have only come across two cases that merit this appellation On each occasion these tumours were completely embedded in the sole, and on carefully cutting around them they appeared quite detached, and were easily removed; in size they resembled a small hazel nut but somewhat pointed at both ends; on tranverse section they presented an outer covering of horn, the interior being filled with a kind of caseous material, and to the best of my recollection I found them in the *hind* feet, exactly at the seat of corn. The predominant situation of corns will be found to be in the *front* feet, and the inner angle of the foot is more frequently affected than the outer. Cases of corn in the hind feet are of somewhat rare occurrence.

Admitting that the shoe is usually the offending body either by careless fitting, or by allowing it to remain on the foot too long; it is also possible for a stone or gravel to become lodged between the shoe and the sole and produce the same result.

A shoe being improperly shaped or carelessly put on might produce a corn, by preventing a necessary amount of yielding of the sole under the weight or force applied upon it during action.

The fact of the fore feet being almost exclusively subject to this kind of injury is partly to be accounted for, in the London van horse, because having

to do a considerable amount of fast trotting, it is absolutely necessary that the fore shoes be kept *short* and closely *fitted* at the heels. The fore feet too have to support a much greater weight, which in action is thrown directly upon them, and this, with the fact that the inner angle of the foot is always weaker than the outer, is a sufficient explanation for the prevailing locality of corns.

Other causes in the production of corns, are, bad conformation of feet. I have noticed that those with flat, full soles and low, weak heels, are most susceptible.

I attribute the rarity of corns in the hind feet in a great measure to the extra length the shoes can be fitted at the heels, in fact, their occurrence in the hind feet, in cases that have come under my observation have, generally speaking, being the result of shoeing with a *feather-edged shoe.*

Before completing these comparatively superficial remarks upon so important an injury, I should like to submit for your observation and discussion, the fact that it is by no means uncommon to find a corn accompanied by a sidebone. To my mind this seems rather difficult to account for, unless we fortify ourselves with the hypothesis that those conditions and conformations of feet which are predisposed to the one, are equally so to the other.

Sandcrack.

This term as applied to a disease of the foot would naturally be understood by the uninitiated to mean a *crack* caused by or containing *sand.* This of course sounds rather ridiculous when we consider the nature of the affection as applied to the foot of the horse, and remember that it is practically speaking confined to those horses which have to encounter the stone paving in our large towns. "Percival" suggests that the word *sundered* substituted for *sand* would be more comprehensible, and to all intents and purposes a better definition, and in this we may agree. Sand is a comparatively scarce material, certainly much more needed in some parts of our London streets.

A sandcrack, using the ordinary acceptation of the term, may be described as a longitudinal division to a greater or less extent of the horn fibres of the wall of the hoof, as a rule commencing at the coronet, and extending downwards either in a straight or zig-zag fashion. It may be found in any part of either fore or hind foot, but more commonly is it noticeable at the front part of the *hind*, and the sides or quarters of the *front* feet. It is usual for a "quarter crack" to assume a more slanting direction than one occurring at the front of the foot, owing to the horn fibres taking a more oblique course. The crack may consist of a simple cleft of the horn fibres, involving the sensitive structure only at the juncture of the horn with the skin, or it may assume a much more serious aspect, and the separation extend so deep as to implicate the sensitive laminæ, in which case the inflammation resulting generally terminates in the suppurative process, and if this is not shortly relieved from below, the pent up matter will naturally work its way to the coronet, and produce such an amount of tumefaction as to result in a total separation of the horn from the coronary secreting substance. As a sequela we often get malformation of the foot in this particular part, resulting in a permanent eye-sore if nothing more serious.

With regard to this particular disease I have not been able to trace any record of its ever occurring to the foot previous to its being submitted to the shoeing-smith, and as before remarked it is unusual for the feet to become attacked until they have been subjected to the wear and tear of our hard roads; more especially do I allude to the varying kinds of material at present used in paving the streets in our large towns.

So far as the smith is concerned in the production of sandcrack, it may be occasioned by his fixing the shoe on without getting it well embedded, and so causing an inordinate amount of pressure in any part of the foot: or again, by not sufficiently cutting away the toe of the foot—thus exposing it to the strain of improper angles. These, together with the concussion, the pace, and the big loads which horses are frequently called upon to draw, are, I think, sufficient to justify my having classified "sandcrack" as being either directly or indirectly attributable to injuries. It is well known that horn is incapable of active disease, being a secreted and not a formative material, hence the cause must be an *extrinsic* one.

The wet and dirty condition of the streets is also an important factor in their production. Especially do I allude to this circumstance, because after a horse has so far recovered from the lameness attending the original crack as to be fit for work, so sure will the dirt and moisture work its way in and so re-open the fissure and make the horse as lame as ever for a few days.

Amongst natural causes the insufficiency of horn secretion in any part of the foot would have a great tendency to result in a sandcrack. Horses with upright, blocky feet I have found more predisposed to TOE sandcrack, and those formations which I have previously noticed as more liable to corns, are in my opinion also susceptible to QUARTER sandcrack. It is by no means an uncommon coincidence for a sandcrack to supervene upon a severe tread or other injury to the coronet, and when arising from this cause, I have found them the most difficult of any to deal with. Another description we frequently encounter as a cause of lameness, is what I have chosen to designate as

Sandcrack of the Sole.

This I think I am justified in saying has never been expounded by any of our writers on foot lameness, it certainly cannot be said to be anything new, and possibly might have been classified by authors under the heading of "Bruises to the Sole." But when we come to notice the characteristic features in connection with this as compared with a mere bruise, a marked deviation can be observed: for instance, it is invariably found around the sole that comes in contact with the shoes, consequently so far as the shoe is concerned in producing the other kind of sandcrack, so it must be admitted that the shoe is equally productive of the kind at present under

consideration. On a careful examination of the foot, after the removal of the shoe, in order to discover the exact part of the foot where our search for the cause of lameness is to take place, nothing will be noticeable, except the flinching of the horse when the sole is tapped with the hammer or squeezed with the pincers; but on removing the sole with the drawing knife a distinct black mark will be found, which will reveal upon close observation nothing more or less than a split in the sole, analagous in every particular to the crack common to the wall. A minute search of this must be made, until the pent up matter, which I might say is invariably present, is allowed to escape; in colour the pus resembles and is almost identical with that found to accompany a prick in shoeing, consequently considering that these cracks or splits are always found in the immediate vicinity of the nail holes, a certain amount of discretionary skill is required in order that the lameness may be attributed to its proper cause. This is one more instance in which the presence of the veterinary surgeon is imperative, in order to prevent undue blame being attached to the shoeing-smith. Misconception in these cases might very easily arise where parties concerned are disposed to accept an unskilled opinion—sometimes resulting in danger to the proprietor of the forge not only of losing a shoeing contract but also of being involved in other ways which would probably prove even more disastrous.

Treading on the Clip.

This is also a frequent cause of serious and prolonged lameness, and may arise either from the shoe being actually thrown, and the horse's foot coming in contact with it, or as is more generally the case, the shoe becomes loose from the breakage of some of the nails or otherwise, and allows sufficient space for the clip to become imbedded in the foot, and so lame the animal. The wound, on searching with the knife, will be found to present a dark appearance, and to correspond with the size of the clip; and when it is the result of the shoe becoming loose *only* it will be noticable at the juncture of the sole with the crust. If the injury is caused by a thrown shoe, *any* part of either the frog or the sole may be the subject of the injury. It is not unusual for a portion of the clip to break off in the foot, so when an examination of the shoe that caused the injury is impossible, a thorough search of the wound should be made with a view of detecting any broken pieces that might be in the foot.

Should the pedal bone become injured, and this is by no means an uncommon occurrence, the case must be looked upon as serious, and some weeks will elapse, even under the most favourable circumstances, for the exfoliation of the piece of injured bone to take place.

On carefully recording these cases of injury it will perhaps appear rather astounding to you that damage of this description to the pedal bone is much oftener attended with more successful results than when this bone is the recipient of an injury from any other source. This is, to a certain extent, proved by the rarity of a specimen of this kind of injury.

Malformation of the coronet is not an unfrequent subsequent effect. This is likely to arise when the suppurative action attending takes an upward tendency in spite of every attention, and relieves itself by the formation of an abscess, which after the healing process has subsided leaves such an amount of thickening, as to depreciate the animal's value, if not also its future usefulness.

Picking up Nails.

This is, in my opinion, of even more importance than any of the others, and is of much more frequent occurrence than one would imagine. The horses which comprise the studs of our large railway companies, carriers, and contractors, working in and about the city, the docks, and the numerous depôts, where packing-cases form a large proportion of consignments, are especially liable. From the different kinds of specimens I have laid before you, which are not only various but somewhat curious, you will see that the streets have contributed not only nails, but such articles as bolts, screws, flint stones, and pieces of broken bottles which the horses' feet gather during their travels. This kind of injury is one of the greatest pests which we, as London veterinarians, have to contend with. It not only entails a large amount of suffering to the animal that is unfortunate enough to have its foot so damaged, but the actual loss annually accruing to our large horse owners is so enormous that it is next to impossible to estimate, and, forsooth, it is not in our power to prescribe a remedy.

The specimens, which are very numerous, have all been taken from horse's feet within so short a period as the last six months, a fact some of you will no doubt consider almost incredible. The predominant description, you will observe, is what is known as the ordinary *French nail*, such other miscellaneous articles as bolts, various pieces of broken iron, flint stones and glass, mutton chop bones, ordinary toilet pins—and in one instance within my recollection, the prongs of a dinner fork—are more uncommonly met with, but are equally productive of serious lameness. The extent of the lameness, resulting, naturally depends upon the part of the foot penetrated and the extent of the penetration. The only parts of the foot subjected to these injuries are the sole and the frog, but the latter on account of its exposed situation and softer texture is more susceptible than the sole. The usual spot for gathering these foreign materials, and especially *nails*, I have found to be within about an inch of the point of the frog, and generally in the commissure existing between the sole and frog. All the four feet are unquestionably liable to injury by these agents, but on carefully recording such cases it will be noticeable that the hind feet oftener suffer than the front, and this, in my opinion may be satisfactorily accounted for by the *slipping* of the hind feet, during the time the horse is in the act of backing his load to the required position in the different goods depôts or warehouse yards.

The success attending upon the treatment of these cases depends in a great measure upon the length of time the nail or other object has been in the foot

previous to being detected. Cases have come under my notice where tetanic symptoms have developed themselves before any attention whatever has been paid to the foot; the nail only causing slight lameness. the careless stableman no doubt thinking it would pass off if the horse was allowed a day or two's rest. The seriousness of the case depends of course upon the extent of the injury to the sensitive structure of either the sole or the frog. Concerning punctures to the latter, I have known a nail even to penetrate so deep as to actually damage the navicular bursa. but these cases fortunately are of rare occurrence. As regards punctures of the sole, these as above stated are much less frequent, but when found it is not uncommon for the pedal bone to become involved in the damage done. When such vital and important structures as the bone and the bursa are implicated, such cases must be looked upon as of long duration, and are, as a rule, very obstinate and tedious to deal with.

The lameness resulting from the presence of a picked-up nail is often peculiarly indicated—the horse suddenly snatching up the foot after its coming in contact with the ground. A leather sole is not always a certain preventative or safeguard against the foot being injured in this particular way, as I have come across two cases within the last six or eight years where the nail actually passed through the leather and punctured the frog to a considerable depth.

Having now completed the very brief, and I am afraid rather uninteresting, description of the most common injuries that happen to the foot of the horse, I think my endeavours to absorb your interest would be even more incomplete if I closed this paper without commenting a little upon the

Treatment.

I do not anticipate that I shall elicit anything out of the common in the details of my treatment, but an interchange of ideas upon any practical or scientific subject often tends to enlightenment. and encourages us to adopt other remedial measures than those to which we have so long been accustomed. It should be our utmost endeavour not solely to maintain our professional reputation, but to strive for the alleviation of suffering to which the animal under our care may be subjected, and at the same time to study the by no means unimportant factor —the interests of our client.

The treatment necessary for all foot cases is based upon the following settled rules of action, viz:— Remove the cause: Relieve the pressure: Give exit to matter: and—most essential of them all— Expedition.

It is not usual for the veterinary surgeon to undertake the active part of removing the shoe and cutting out the foot, but it is nevertheless indispensable that he should be capable of performing this act if occasion require him to do so, therefore a good "smith," either in his employ or otherwise, should be at hand to carry out this duty. It is absolutely necessary that the tools requisite should be kept in workmanlike condition; blunt knives not only tend to excite the operator's temper, but prevent him carrying out his search quickly and skilfully. Three or four sharp foot searches varying in sizes will be all that is wanted, so far as instruments are concerned. Of course the paring away of horn depends upon the amount of relief required, but my experience has taught me that the more conservative we are in this respect the better.

The treatment necessary for a "Corn" is generally speaking simple, and in the majority of cases of short duration and very effectual. It is, I think, an acknowledged fact that the corn must be well cut out with the view of ascertaining whether or not pus exists there; if not, and the lameness is only slight I have adopted the plan of not applying a poultice at all, but simply removing the exciting cause by having the shoe cut in the manner shown in specimen, and at once put on with a leather sole, when in nine cases out of ten the lameness will disappear after twenty-four hours rest, and the horse is fit for work again.

But when the corn is in a state of suppuration. it will be found necessary to poultice it for about two days, after that allow the foot to remain bare on a peat-moss bed for a similar period, and in the meantime dress it with the ordinary white lotion. which I have found to be more efficacious than any other kind of foot dressing. Then apply the shoe and leather as represented, when you may expect in the majority of instances to have your horse fit to resume work again.

The treatment for the next foot injury, viz.,

Sandcrack,

Is I shall possibly find from your criticism, of a more questionable character, but I can only relate what I have found after many trials to be the most reliable and successful. I repeat that, as with corns, it is unmistakably necessary that the crack should be thoroughly cut out. The kinds we have to encounter are very often in a festered condition, and if a means of escape is not quickly found for the matter it will, with the assistance of poulticing, soon find an exit for itself in an undesirable situation.

I have often consulted practitioners from provincial towns. and they say that it rarely happens with them that such an amount of cutting and paring is necessary. To this I can only add the remark that the cases we meet with in London are more serious than those found in other towns, this is perhaps not difficult of explanation, at least amongst that class of animal which is more especially the subject of my paper, viz., vanners.

A certain amount of restriction should be put upon poulticing sandcracks. two or three days in my opinion being quite long enough; then, after allowing the foot to get hard. put on a leather sole and a shoe with side clips, as represented in specimen, further rest and an occasional blister to the coronet will materially facilitate the growing down of the horn, which is I believe supposed to grow at the rate of about a quarter of an inch a month. When this has taken place, and the horse can withstand the jar of the stones, I have a nail inserted transversely to the crack and clenched in the ordinary way. (See specimen). The cutting away of the

toe as defined in the specimen has also a useful tendency in assisting the object of the nail, *i.e.*. in keeping the crack together.

The treatment essential for the other kind of injuries I have quoted—treading on the clip, picking up nails, &c., needs very little further comment. The application of poultices to the feet so injured, I advise should be of as short a duration as possible. Of course when our case does not respond in the way we generally expect it to do, we may then conclude that we have to deal with damage to the bone. These are fortunately somewhat rare cases, and no fast rule can be laid down.

In conclusion I should like to make just a few remarks upon a particular kind of shoe that is very frequently adopted in cases of foot lameness, and imagined by some to be unequalled in supporting and guarding the foot, and this is the

Bar Shoe.

It is a shoe that has been handed down from generation to generation, and upon this simple fact alone I am inclined to think rests the only reason for its almost universal adoption, without any consideration whatever whether an ordinary plain shoe upon being properly adjusted should not be equally effectual. So far as I am concerned I have not used a bar shoe for the last five years, having been able to so manipulate an ordinary plain shoe that in conjunction with a leather sole, it should, I think, always suffice for any kind of foot. A bar shoe is not only unsightly but unnecessary in my opinion, for the frog if protected by a leather sole is quite capable of sustaining itself against all wear and concussion, without inflicting it with a bar of iron, which only labels the foot and attracts the attention of all outsiders. Of course it will no doubt be said that bar shoes are absolutely indispensable for some conditions of feet, but so far as my experience goes, I am inclined to make the somewhat appalling assertion when such is the case that the horse is more valuable to the "knacker" than to his "unfortunate owner."

Dec. 1st, 1889. 228 Camden Rd., London, N.W.

VETERINARY MEDICAL SOCIETIES.

LANCASHIRE VETERINARY MEDICAL ASSOCIATION.

The usual Quarterly Meeting will be held at the Blackfriars Hotel, Manchester, on Wednesday, December 11th. Tea at 5 p.m. The Chair will be taken at six o'clock prompt.

AGENDA.

The usual Preliminary Business.

Election for Membership of Mr. George Howe, M.R.C.V.S., Market Street, Buxton.

To consider a letter from Prof. Walley, re-Inspection of Meat.

Election of Officers for the ensuing year.

Mr. William Hunting of London, will read a paper on the Treatment of Wounds.

ARTHUR LEATHER, *Hon. Sec.*

BORDER COUNTIES VETERINARY MEDICAL ASSOCIATION.

A General Meeting was held at the Bush Hotel, Carlisle, on Friday, 8th November, 1889. Present: President, Mr. Wm. Donald, Wigton, in the chair; Prof. Williams, Edinburgh; Messrs. Greaves, Manchester; Bell, Carlisle. Dawson, and McKie, of Carlisle; Campbell, Kirkcudbright; Chalmers, Annan; Steel, Wigton; Pender, Lockerbie; Pears, Langholm; Coates and J. G. Bell, Brampton; Tallentire, Skelton; Crowdace, Haltwhistle; Shore, Aspatria; H. Thompson, (Treasurer); J. Armstrong, (Secretary).

Minutes of previous meeting read and confirmed.

Mr. BELL (Carlisle) moved that the new rules (amended) be adopted.

Mr. THOMPSON seconded. Carried nem. con.

Mr. DONALD.—Since the last meeting one of our members has been called from us by death, he referred to Mr. Carruthers of Brampton, and he proposed the usual vote of condolence with his relatives. Carried unanimously.

Mr. ARMSTRONG nominated as members of the Association Mr. Glaister, of Eaglesfield; Mr. McKie, Carlisle; and Mr. Pender, Lockerbie.

Mr. DONALD.—I am sorry to say that Mr. Soulsby has sent in his resignation as a member. He finds it inconvenient to attend the meetings, and therefore wishes his name to be erased from the members' list. Agreed to.

Mr. ARMSTRONG reported that he had received a letter from Mr. Kidd, of Hungerford, on behalf of the Royal Counties Veterinary Medical Society, in which it was suggested that the Treasurer and Secretary of each Society should attend a conference to be held with the view of arranging dates on which the respective Societies should hold their meetings, as at present several Societies held their meetings on the same day, which was an inconvenient practice. After some discussion it was agreed that the Secretary and President should arrange with the other Societies and try and fix on dates.

Mr. DONALD gave notice that at next meeting he would move:—

1.—That the time has now arrived when the Members of the various teaching schools should be ex-officio members of Council.
2.- That three years should be the limit for which the Examiners should be appointed.
3. When a member is elected to the post of Examiner he shall resign his seat in the Council and shall not be eligible for election as a member of Council so long as he is a member of the examining body.

Mr. THOS. GREAVES, Manchester, was unanimously elected President for ensuing year.

Mr. Donald and Mr. Little, of Abbeytown, as Vice-Presidents for the ensuing year. The Secretary and Treasurer will retain their respective offices.

Mr. Bell exhibited specimens of the lung, heart, and trachea taken from a heifer, the lung having a briar stuck through its entire length. I was called in six weeks ago to see a heifer and diagnosed broncho-pneumonia. As she was a fat heifer I ordered her to be slaughtered; the manager said he would much rather have her treated if it was possible for her to get better. She was put under treatment and apparently got better, exhibiting all the usual healthy signs. Three days ago I was called again to see her, and then I gave an imperative order for her slaughter, and gave instructions for the viscera to be kept. You will notice that there is a perforation of the trachea. I cannot remove the briar in the lung without cutting open. It has passed in and is just obtruding at a point touching the heart. It was an unique occurence.

A conversation on the case followed, in which Prof. Williams gave it as his opinion that the briar had just been swallowed and then had penetrated the œsophagus into the trachea and was drawn into the lung.

Mr. Thompson before reading his paper exhibited a number of instruments for operating in parturition cases, and for extracting teeth, and which were principally made from his own design and suggestion. He explained their use, &c.

He then read his paper entitled "Odds and Ends." (which has already appeared—see p. 240-44).

Mr. Thompson exhibited clayey substances removed from a horse since his paper was written. They were in the fossa pressing against the meatus. He said, I found great difficulty in removing them, but after that he was all right. Two days afterwards, however, he could not walk with his near hind leg. I went to see him, and thinking it was owing to the re-action, I said he would be all right next week, and so it turned out.

The President suggested that each head of the paper be discussed separately.

Prof. Williams.—I think this paper a very valuable contribution. I have no doubt there was reflex paralysis in the case he gives. It bears out what is well recognised in human practice that irritation of the mucous membrane of the bladder or urethra may cause paralysis by reflex action. When the source of irritation is removed, paralysis disappears —this is a reflex action of the spinal cord. You will find a dog, for example, perfectly well, and in half-an-hour he is paralysed; give him a purge and he is as right as when the disease came on,

I have never in my practice met with cases of the kind mentioned by Mr. Thompson. This only, however, shows how necessary it is to examine cases of an obscure nature thoroughly. There is paralysis in some cases arising from a cause away from the limbs, the source of irritation being in another part altogether. We may study human surgery in this respect, for we know by reflex action that the pain from disease of the knee joint is felt in the hip, and that from hip disease is felt in the knee-joint, and not in the hip. In cases of obscure lameness we should make every investigation. Mr. Thompson is very characteristic when he says "I could not tell what was wrong, I therefore got some warm water" and went on with his examination.

Mr. Greaves.—I have very little to add to what Professor Williams has said. I have never once met with such a case as Mr. Thompson gives. If you will allow me I will say a few words about the case Prof. Williams has named. It was not a blanket, but a nail bag the horse had chewed, which got down the œsophagus, and he became very much pained—to all appearance inflammation of the bowels. He had large quantities of medicine given to him and was stimulated and I think was with us three days, and it is our custom if the pain continue for any length of time to examine per rectum, with warm water or sometimes employ tobacco fumes. The horse was on his last legs—almost tumbling down. With the assistance of the horse-keeper, I pulled the substance out, which caused the pain to go away. It took us twenty minutes. It was as thick as my thigh. The pain subsided at once, and the horse did well; that shows the importance of examination in these cases. There are numbers of instances where we have taken calcareous substance away by the rectum by adopting that course. At present we have a case where I am certain a stone has got lodged in the smaller gut. We are all greatly indebted to Mr. Thompson for what he has stated.

Mr. Campbell described a case similar to those mentioned by Mr. Thompson, the clay-like substance was not however so large.

Mr. Bell.—I had a remarkable case some years ago which was mainly owing to the deposits in the fossa. The penis was obtruding and very much swollen, and had been for some time. I had to lay the penis open and work out the clay deposits. I have never seen lameness in these cases. I invariably have the penis examined and washed out, and practitioners will generally find more or less of a deposit.

Prof. Williams.—On the next subject I am more at home, I have seen a great many cases of obstruction of the urethra in tups. Mr. Thompson gives the history of the cases, and the symptoms are what I have seen repeatedly. The formation of these deposits in tups is always found in animals which are highly fed, for show purposes—in tups of the very best description. With tups left out to grass you never find it. No matter how highly the pasture may have been manured, (it may be manured by bones, super phosphate, and so on), it does not induce the deposit in the urethra. In cases I have attended the deposit has also been found in the bladder. Mr. Thompson mentions that several tups recovered. I must say in my experience I have I have not found them recover—the *post-mortem* showing the bladder as if it were "rough cast." The inside of the bladder has exactly that appearance. I have seen many scores of these cases. I thought when I first met this condition that it was due to the turnips being grown upon land manured with dissolved bones—that the turnips were exceedingly rich in the superphosphates and that the phosphates were deposited in the bladder, and my

recommendation to the Messrs. Archibald, the great breeders, was that they should give them less turnips—reasoning from a chemical point of view. The sheep were fed on cake, locust, and a mixture of food, and turnips from land highly manured, and I thought there was too great a deposit of phosphates from the turnips, but these gentlemen's knowledge—practical knowledge—was worth more than my theoretical knowledge. You are all aware sheep take very little water if they can get plenty of turnips. Messrs. Archibald diminished the quantity of cake and gave more turnips and thus forced the sheep to take more water, and in this way the quantity of urine secreted by the tups was very much larger. That is six or seven years ago, for years before that they were continually losing tups from this cause They of course knew a great deal more than I did about feeding, and I pointed out that the sheep should have more water in the urine and they would overcome the condition. I recommended hydro-chloric acid, &c., but that had no effect. If you give sufficient to dissolve the stone in the bladder it destroys the animal's life. If the sheep are in good condition it is best to make as much money of them as possible, by slaughtering them.

Gut-tie.

Prof. Williams approved of Prof. Simmond's demonstration of how the ailment was produced by the spermatic cord adhering and entangling the intestines later in life which had been sneered at by other authorities. The animal as Mr. Thompson states sometimes backs up with his hind feet and sometimes the action is reversed. The facts laid down by Prof. Simmonds from his observations in Norfolk and Suffolk explain the matter fairly well

Mr. Bell described the case of a mare he found suffering acutely. I immediately explored the rectum and I fancied I felt a cord tied round the bowel. The animal had not passed anything—gas or solids—for three days, she was enormously distended and I immediately used the trochar. I relieved the bowel but not the tie, and I could also feel there was a considerable amount of gut underneath still filled with gas. I thought she would die. The message next morning was, that the mare was dying, two hours after that the mare had suddenly fallen down—dropped down to die—when she jumped up again and for the first time for four days passed gas. I believe in that case we had something strangling the bowel—something which by the sudden fall was snapped. From that time the mare never looked back.

Mr. Campbell.—Something of this kind getting round the intestines is very common, is it not?

Mr. Greaves.—I differ from my friend. I have a good deal of experience in horses—in every case of this kind we pass a hand into the rectum, and in no single case have I found the cause.

I remember a case exhibiting every appearance of dying within a few hours: it rolled on its back and remained there for about a quarter of an hour—rolled back again, got up, and was all right. It was as if by magic; the pain was gone, and the horse walked about. The impression in my mind was that the cause was a twist and it had slipped back again and righted itself. The horse got better and worked for years afterwards.

Mr. Carlisle.—I have had several cases of guttie in bullocks. I perform abdominal section and put my hand and arm in altogether and relieve the animal. The old farriers would roll such an animal backwards and forwards for a long time. They succeeded now and again in giving relief. I have only seen this ailment in bullocks, and we generally thought the animal had stretched itself by jumping on other animals.

Abscess in Sinuses in the Horn of a Bull.

Prof. Williams.—I never saw but one such case in my life and the symptoms agree in a remarkable manner with those described by Mr. Thompson. There was immense excitement in the heart. The animal threw himself down and repeatedly fainted away. I examined him and carefully went to his head and grasped the right horn and at once he evinced the greatest agony; by careful manipulation I found it was very hot and loose. You could almost see through it. It was a whitish horn. The next day I did the same as Mr. Thompson did, bored it with a gimlet, and nothing but black blood came out. We applied hot fomentations to the part. The pulse in his case was full and bounding; in mine it was palpitating. When the pain was relieved there was a cessation of the symptoms at once.

Mr. Thompson.—In my case it was the left horn. The agony shown by the animal was awful and the perspiration rolled off him. I just put my hand to his horn and he fell down at my feet, sticking his tongue out. I cannot tell the cause of it, it might be owing to a blow.

Mr. Bell had a similar case, caused by a blow. Two animals had got together and had rushed against the wall. The horn of one was injured. Nothing was done to the animal at the time, but about six weeks after it suddenly showed great pain, terminating in an abscess in the lower part of the horn. It was opened and the animal got all right. Injury to the horn is the usual cause of the abscess.

Abscess above Rectum.

Mr. Carlisle.—I have repeatedly met cases of this kind (mostly in horses) in the rectum, but I call them polypus. Sometimes they are in a considerable distance, as far as I can reach. They have been in two or three cases nearly the size of a small decanter, the contents are usually of a bloody tincture, something like port wine and about the same consistency. They never require much further attention. Two years ago an animal was brought to our place. I got my arm in and found the tumour at once, after tapping it it never required further treatment. The sac which held the contents remained for some time and what became of it I don't know, but it would go away. I could not attribute the cause to anything in particular.

Mr. Bell.—I came across a case in the rectum the other day, which is the only experience I have had.

I made an injection, and applied warm cloths, and it is all right now.

Mr. Armstrong.—About two years ago I had a cart horse which showed signs of colic. On exploring the rectum I found much swelling, and could not make out anything particular. I examined the place again and ruptured it with my finger; I think there was a quart of pure pus came away, and he went on all right.

Pelvic Abscess.

Mr. Campbell related a case which he treated this last season. She held her tail to one side and walked as if she could not use one hind leg. I examined per rectum—entered a small trochar, nothing but dark matter came away from the abscess. I made a transverse opening—introduced my two fingers and took away a quantity of clotted blood. To my surprise she made a splendid recovery, and has already taken the horse. I think there might have been an injury to some part of the pelvic apparatus.

Mr. Bell.—In several examinations for soundness my attention has been drawn to the alteration which has taken place, no doubt from the act of foaling, a limb has gone through into the rectum. I remember one case particularly where a man had bought a horse at Dalkeith, and he thought he had bought a very cheap animal. He rode it down to Carlisle, and he described the peculiar sound which was made as he came along—he thought there was a steam engine behind him. It is a very common accident, and it is well—if the mare has ever had a foal particularly—to ascertain that everything is right in that region before giving a certificate.

Mr. Carlisle.—I have seen a good many cases like that, very often the gut passes through the vagina—rectal wall. I know a very valuable mare in which the fœtus now comes in that way, and drops through the opening in the rectum, and come away from the rectum. It is very unsightly; always something sticking to the hind parts; no other inconvenience is suffered.

Mr. Pender described his treatment of a thoroughbred mare last summer. She had foaled in the field; she was rather stiff in the off hind leg, and sick; she was considerably swollen on the off side. On examining the vagina and rectum I found the rectum much swollen from a large abscess. I had it fomented and gave medicine; it was the same next day. I made a good free opening about 2½ inches long, got my fingers pretty well in and found large clots of blood, portion of which I removed. I was afraid hemorrhage might set in. Altogether there would be three or four quarts of matter, and there was a dribbling of dark coloured blood for four or five weeks. I think a blood vessel had given way in the straining and thought it preferable to open externally.

Mr. Greaves.—Was it at the base of the rectum?

Mr. Pender.—At the right side of the vaginal wall. It was filled with blood only. I never had a case of the same kind before.

Prof. Williams said that when it could be done the opening should be made externally—"You cannot do so in all cases. sometimes the tumour is too far back. In this case I think you should have washed all the blood out. The long discharge of black blood was due to the fact that some clots were left in the cavity, and then were gradually breaking down, and you run the danger of blood poisoning.

Mr. Pender.—The parts were cleansed three times a day.

Bone under Cow's Tongue.

Mr. Thompson exhibited the bone and supplemented the remarks contained in his paper thereon. He also exhibited molar teeth and calculus referred to in his remarks on those heads in his paper.

Gall Stones in the Biliary Duct of Horse; and Cows Poisoned by Arsenic.

Mr. Thompson in supplementing his paper on these subjects said he was satisfied that arsenic did not establish its action until it reached the fourth stomach. Symptoms of it might show, but these were similar to a common cold; but when the poison got into the true digestive stomach the action was set up four hours afterwards

Prof. Williams.—We are very much obliged to Mr. Thompson for his very practical paper. He seems to have been successful in the recovery of the cases. I have seen very few specimens of gall stone. One I have seen was not canary colored, yet like Mr. Thompson's it crumbled at the slightest touch. I have one now from the biliary duct of a horse which is quite hard—to all appearance it is like fancy soap, and glistens as if it were glass. It has a shining appearance, but in the other instances they crumbled to pieces. Now the question is did the horse referred to by Mr. Thompson die from the calculus or the kidney? I think the latter—from the symptoms represented. No doubt the calculus may have given him some pain, and possibly there may have been disease of the liver. Disease of the liver and disease of the kidneys very often go together, in stallions particularly. They are subject to these degenerative diseases and I should think there was disease of the liver associated with the kidney.

I am glad that for once I have given satisfaction to my friend Thompson. He says I described those symptoms exactly in my work—I described them from observation. They are rare cases. I have only seen three, and the description is true to nature and I am proud that such a critical observer agrees with me!

Mr. Bell.—A remarkable case of fracture of the molar tooth is perhaps worth relating. A horse, the subject of a law suit at Jedburgh, had been sold and owing to a slight discharge from one of its nostrils was returned to the dealer in Carlisle. It was sold again and got into Jedburgh. It was there put under treatment by a practitioner, and was under treatment for some time before the case came on. I was sent for to examine the animal and found that the 3rd molar tooth was gone. The horse was sent down to Carlisle and I operated upon him. I opened the nasal sinus and found there a fractured molar tooth in three pieces. It had been there a con-

siderable time. The animal had not been out at grass for several months but the cavity in which this hollow tooth was resting was filled with grass, showing that the food had been forced up into the sinus during the summer months. I have never seen cases similar to those described by Mr. Thompson, but this case was remarkable by the whole tooth being forced through—fractured in three pieces.

Mr. CARLISLE described a case where a molar tooth was driven into the sinus. Mr. STEEL also recorded a similar case.

Mr. GREAVES proposed a vote of thanks to Mr. Thompson. The paper had elicited some useful discussion.

Mr. CAMPBELL seconded—carried unanimously.

Mr. THOMPSON returned thanks.

Mr. THOMPSON, the treasurer, submitted the statement of accounts in connection with Mr. Carlisle's portrait fund, and then presented to Mr. Carlisle a list of the contributors, which was printed on parchment and neatly framed.

Mr. CARLISLE suitably replied and thanked the members and friends for their kindness to him.

Mr. GREAVES, on behalf of the Society, then presented to the Secretary a very handsome timepiece, bearing a suitable inscription.

The SECRETARY briefly thanked them for their unexpected gift to him.

Mr. BELL proposed a vote of thanks to the President for the able manner he had conducted the business of the Society during his year of office.

Prof. WILLIAMS seconded, and it was carried with acclamation.

Mr. DONALD thanked them for their kind vote, and for the help he had received during his presidency, and hoped that the good feeling amongst the members of the Society would continue to exist, and that other Presidents would find matters work as smoothly as he had done.

GOVERNMENT VETY. DEPARTMENT.

CONTAGIOUS DISEASES IN ANIMALS.

Reported in Great Britain and Ireland during the week ended November 23rd, 1889.

Pleuro-pneumonia.—There were 6 fresh outbreaks of this disease reported in Great Britain, 4 of them in England, in the counties of Cumberland, Herts, Kent, and Lancaster; the 2 in Scotland occurred in the counties of Edinburgh and Renfrew. The number of cattle attacked was 20, of which 14 were in England and 6 in Scotland; in addition to these, 58 healthy cattle which had been exposed to infection were slaughtered. In Ireland 2 fresh outbreaks were reported and 3 cattle attacked, in the North Dublin Union, where 23 healthy cattle in contact were also slaughtered.

Anthrax.—In England 4 fresh outbreaks of this disease were reported and 4 animals were attacked, all of which died. In Scotland 1 outbreak occurred in Edinburgh, 1 animal was attacked and died. No fresh case of anthrax occurred in Ireland during the week.

Swine-Fever.—There were 82 fresh outbreaks of this disease reported, 79 in England and 3 in Wales; 533 pigs were attacked, 208 diseased swine were killed, 219 died, 20 recovered, and 432 remained alive at the end of the week. Only 3 fresh outbreaks of swine-fever were reported in Ireland during the week and only 3 swine were attacked.

Glanders and Farcy.—There were 13 fresh outbreaks of Glanders in England during the week, viz:—2 in Beds, 1 in Herts, and 10 in London. 27 horses were attacked, 2 in Beds, 1 in Herts, 21 in London, and 3 cases in Lanarkshire on premises where the disease previously existed. In England 18 outbreaks of farcy were reported and 32 horses were attacked; 17 of the outbreaks and 30 of the cases were in London, the other outbreak and the two horses attacked were in Essex. There was 1 outbreak of glanders and 1 horse attacked in Co. Tyrone, in Ireland.

Rabies.—In England there were 5 cases of this disease in dogs, they occurred in the counties of Kent, Lancaster, London, Surrey, and York (W.R.). In Ireland 3 cases of rabies were reported, all in dogs, in Cork, Kildare, and King's County.

AGRICULTURAL RETURNS OF GREAT BRITAIN FOR 1889.

Taking the various kinds of live stock in Great Britain for the year 1889, it is satisfactory to find that there is, as compared with 1888, an increase in the total number of horses and of cattle, and that this advance is accompanied by more noteworthy additions to the stock of sheep and lambs as well as of pigs. There is, it is true, a decrease of 8,879 in the number of unbroken horses and mares returned as kept solely for breeding, but the deficiency in this year, as above mentioned, made up by the increase of 9,918 in the number of agricultural horses.

As regards horned cattle there is an increase, the total number being now 6,139,555. The increase over 1888 is, however, under 10,200, or 0·2 per cent. so that for cattle, taken altogether, we remain practically as we were last year.

Cows and heifers in milk or in calf have diminished in number in Great Britain by 16,805, distributed over the three divisions of the kingdom. Cattle other than milch cows of two years of age and above show an increase of 10,554, and young cattle have increased by 7,431.

Sheep and lambs taken together show this year in Great Britain an increase of 374,871, distributed in an addition to sheep of one year and above of 135,185 and of 232,686 to sheep under one year, the total number being now 25,632,020.

Pigs numbered 2,510,803 against 2,404,344 in 1888, 2,299,323 in 1887, and 2,221,475 in 1886, an increase in 1889 over those years of 4·4 per cent., 9·2 per cent., and 13·0 per cent. respectively.